

REMARKS

Status of the Claims

Claims 1-8 are pending in the present application. Claims 4 and 5 are withdrawn as directed to a non-elected invention. Claim 1 is amended for clarity to specify “wherein a difference in a vapor pressure between the vessel solution and the solution comprising the sample biopolymer is the difference in the vapor pressure produced as a difference in molar concentration ranging from -10% to +8% between solutes in the vessel solution and the solution comprising the sample biopolymer.” Support for this amendment is found throughout the application as originally filed including on page 6. No new matter is entered by way of this amendment. Reconsideration is respectfully requested.

Request for Entry of the Amendment

As noted above, claim 1 is amended to specify “wherein a difference in a vapor pressure between the vessel solution and the solution comprising the sample biopolymer is the difference in the vapor pressure produced as a difference in molar concentration ranging from -10% to +8% between solutes in the vessel solution and the solution comprising the sample biopolymer.” This phrase is in lieu of the canceled phrase “having the same vapor pressure as the solution comprising the sample biopolymer.” This amendment is submitted to clarify the meaning of “the same vapor pressure.” The specification teaches that “the same vapor pressure” means “that the difference between the molar concentration of the solute contained in the solution containing the sample biopolymer and the molar concentration of the solute contained in the humectant [vessel solution] is -10 to +8% (more preferably -5 to +5%)”, *see* page 6 of the originally filed application. Accordingly, Applicants submit that the above described claim amendment should be entered, even though the rejection is final, since amended claim 1 differs from previously pending claim 1 only in that the “same vapor pressure” is substituted with its definition from the present application. In view of the foregoing, Applicants submit that the subject matter of amended claim 1 does not constitute a new issue and entry is respectfully requested.

Issues under 35 U.S.C. § 103(a)

Claims 1-3 and 6-8 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 6,555,361 to Lyman *et al.*, (“Lyman”), Suzuki *et al.*, *Brain Research Protocols*, 1999, 4:29-35, (“Suzuki”), Morel *et al.*, In situ Hybridization in electron microscopy, 2001, CRC Press, Boca Raton, Section 6.9: “Hybridization”, pages 1-2 and 239-243, (“Morel”), and U.S. Publication No. 2002/0127589 to Sato *et al.*, (“Sato”), *see Office Action*, pages 3-8. This rejection is respectfully traversed.

Basis for the Rejection

According to the Examiner, Lyman and Suzuki teach all of the elements of the instant claims except for a vessel solution and a sample solution with the same vapor pressure. However, the Examiner believes that Morel remedies this deficiency. The Examiner states that Morel describes a hybridization method comprising a sample solution that is essentially the same as the vessel solution. According to the Examiner, the sample solution of Morel is 4X SSC and the vessel solution is 5X SSC. The Examiner further alleges that an ordinary artisan could have modified the vapor pressure solutions of Morel to achieve the same vapor pressure solutions described in the instant claims since such modification is routine experimentation. The Examiner also alleges that an ordinary artisan would have recognized that the vessel and sample solutions of Morel have the same properties as the solutions described in the instant claims. Sato is merely cited for describing the elements in dependent claims 2 and 3.

Standards for Obviousness

The differences in concentration or temperature can support the patentability of subject matter encompassed by the prior art if there is evidence indicating such concentration or temperature is critical. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

The Instant Invention

Claim 1, as amended, is directed to a hybridization method comprising contacting a solution comprising a sample biopolymer with only a glass slide, wherein a probe biopolymer is immobilized to the glass slide, placing the glass slide into a vessel comprising a solution, wherein a difference in a vapor pressure between the vessel solution and the solution comprising the sample biopolymer is the difference in the vapor pressure produced as a difference in molar concentration ranging from -10% to +8% between solutes in the vessel solution and the solution

comprising the sample biopolymer, and wherein the vessel solution is not in contact with the solution comprising the sample biopolymer; closing the vessel, hybridizing the sample biopolymer and the probe biopolymer.

The cited references do not teach or suggest all of the elements of the instant claims

Applicants submit that the 4X SSC sample solution and the 5X SSC chamber solution described in Morel differ from each other in molar concentration by 20%. In contrast, the instant claims describe a difference in a vapor pressure, which is the difference in the vapor pressure produced as a difference in molar concentration ranging from -10% to +8% between solutes in the vessel solution and the solution comprising the sample biopolymer. Moreover, neither Lyman, Suzuki, nor Sato teach or suggest the difference in vapor pressure described in amended claim 1.

As noted above, differences in concentration or temperature can support the patentability of subject matter encompassed by the prior art if there is evidence indicating such concentration or temperature is critical. As described above, the difference in vapor pressure between the two solutions specified in the instant claims is not encompassed by the cited references. However, even if there were, hypothetically, an overlap between the ranges described in the present claims and the cited references, the range specified in the instant claims is critical to Applicants' invention. The present application teaches on page 7 that, if the vapor pressure of the humectant is lower than the vapor pressure of the solution containing the sample biopolymer, as specified in the amended claims, there is a reduction in the quantity of the solution containing the sample biopolymer. Alternatively, if the vapor pressure of the humectant is higher than the vapor pressure of the solution containing the sample biopolymer, as specified in the amended claims, the quantity of the solution containing the sample biopolymer is increased, such that this solution overflows and the hybridization cannot be normally carried out. Accordingly, it is critical to the claimed invention that the vapor pressures of the two solutions produced as a difference in molar concentration between the solutes not vary more than -010% to +8%.

Moreover, the present application provides data that demonstrate that when the vapor pressure of the humectant is 20% greater than that of the sample solution, as described in Morel, the quantity of the sample solution is greatly reduced, such that hybridization cannot proceed normally, *see* Example 1 and Comparative Example 3.

In view of the foregoing, the claims are not obvious in view of the cited references. Accordingly, withdrawal of the rejection is respectfully requested.

CONCLUSION


In view of the above amendment and remarks, Applicants believe the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Linda T. Parker, Registration No. 46,046, at the telephone number of the undersigned below to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Director is hereby authorized in this, concurrent, and future replies to charge any fees required during the pendency of the above-identified application or credit any overpayment to Deposit Account No. 02-2448.

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Respectfully submitted,

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